

# UK Patent Application

GB 2 202 664 A

(43) Application published 28 Sep 1988

(21) Application No 8525976

(22) Date of filing 22 Oct 1985

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(51) INT CL  
G06K 7/14

(52) Domestic classification (Edition J):

G4M AA B4  
H4K BNJ  
U1S 1727 G4M H4K

(56) Documents cited

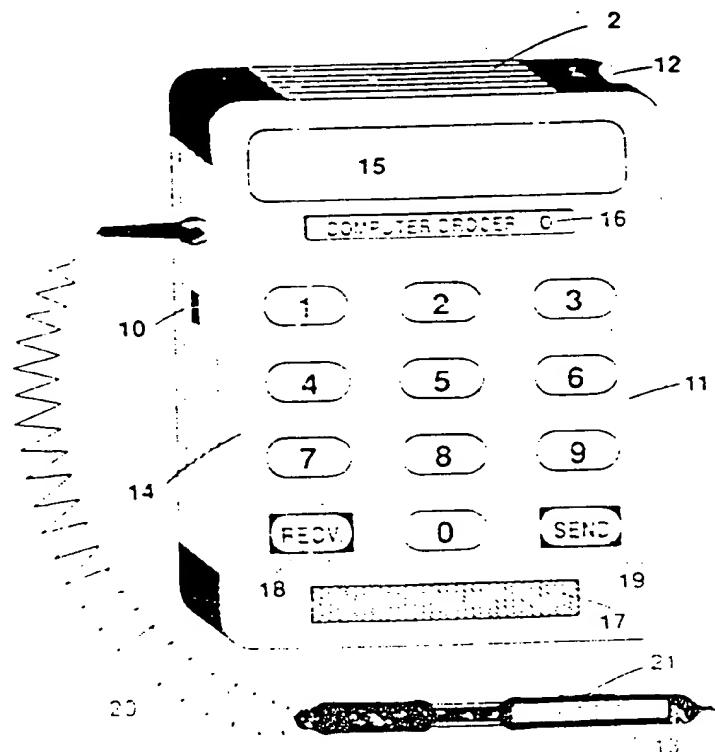
GB A 2118752 GB A 2101842 EP A2 0094571  
EP A2 0069574 US 4516016

(58) Field of search

G4M  
H4K  
Selected US specifications from IPC sub-classes  
G06F G06K

## (54) Automated service systems

(57) A user selects from a catalogue items which he wishes to purchase. Adjacent each item in the catalogue is a bar code which the user scans with a wand 13; he also inserts the number of items he requires via a keyboard on case 11. The user may cancel any part of the order by touching a touch-sensitive area 21 on the wand 13. When the order is complete the user connects a connector lead to a socket 10 and a telephone socket; he then keys in an appropriate telephone number using the keyboard on case 11 and presses a second button 19. By pressing a receive button 18 he obtains information and by pressing a button 16 he receives price and availability information about his order. When the user collects his order from a central store he inserts an identity card into a reader. He selects whether he wants to select his own perishable items; all other ordered items are supplied and loaded in his vehicle.



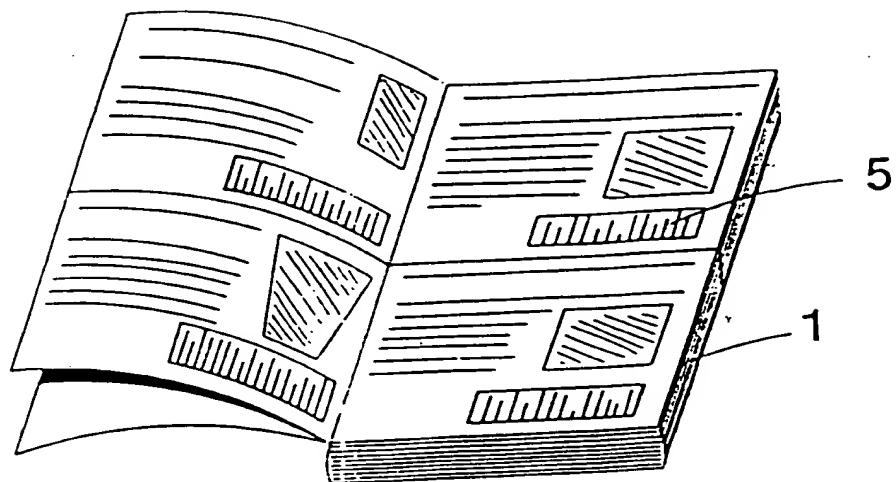
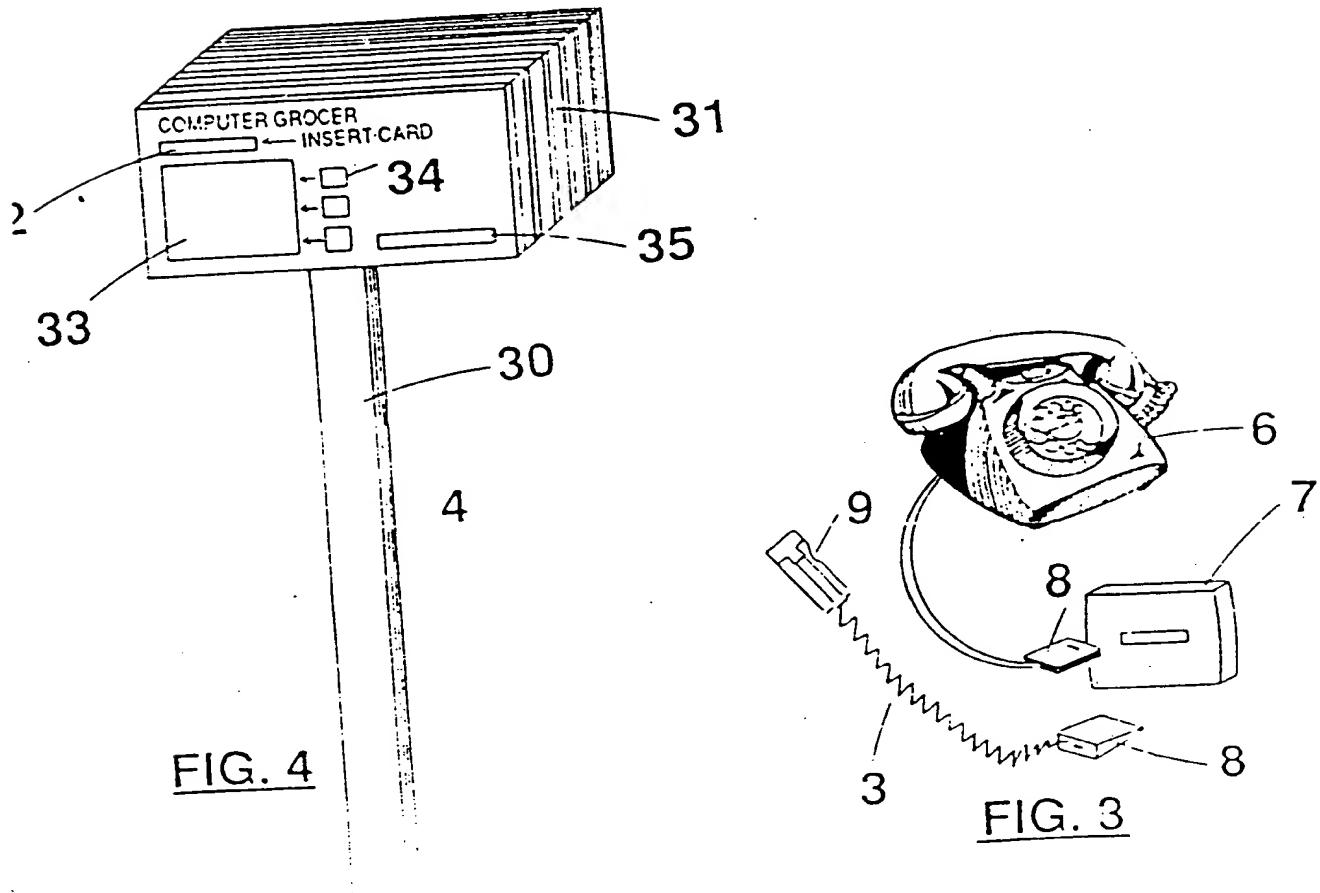
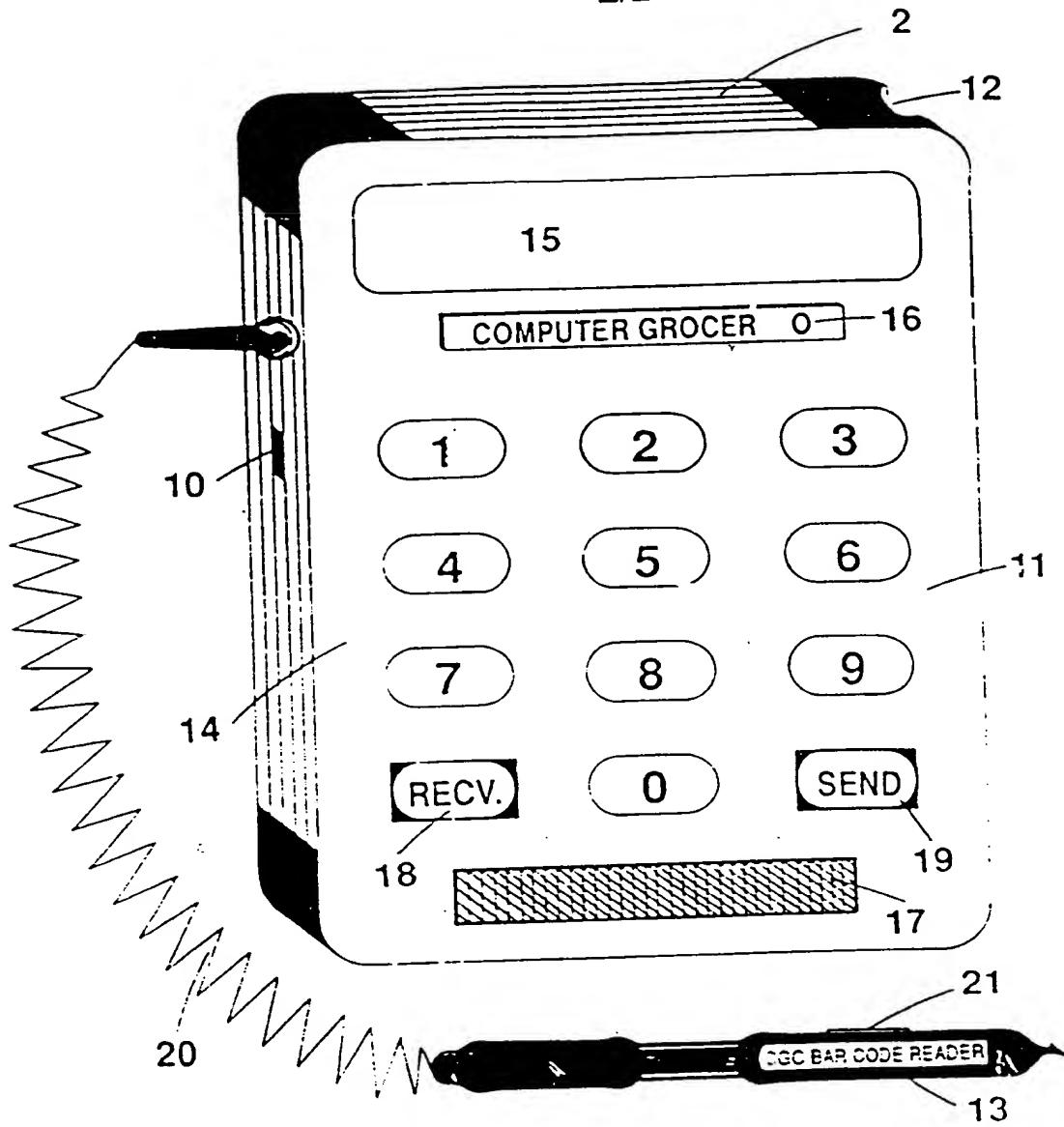


FIG. 1



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Automated Service Systems

This invention relates to automated service systems.

One example of an automated service system which has become important in recent years is the Cash Dispenser type of apparatus used in conjunction with a machine readable card inserted by the user. Such Cash Dispensers are provided by banks to enable their customers to carry out banking transactions outside of normal hours or without the need to consult a cashier within the bank.

It is an object of the invention to provide an automated service system capable of providing further automated services to customers.

The present invention provides an automated service system comprising:

a printed catalogue of merchandise, each item of merchandise being associated with a respective bar code in the catalogue,

a central control unit for receiving, in the form of data transmitted over the public telephone network, orders for merchandise listed in the catalogue, and

a merchandise ordering unit comprising a bar code reader with a telephone transmission capability for use in selecting one or more items from the catalogue and

transmitting electronically an order for the merchandise selected to the central control unit over the public telephone network.

The term "printed catalogue" as used in this specification embraces catalogues produced by any of the known processes for book or magazine production.

The system may also include card reader means for location at a store where the merchandise is available for collection, the card reader means being arranged to read an identity card provided by a customer and to correlate the identity of the customer with an order transmitted to the central control unit by the merchandise ordering unit.

Preferably, the identity card is in the form of a holograph-type identity card of plastics material.

The invention also provides a merchandise ordering unit for use in the system, the merchandise ordering unit comprising:

an electronic processing unit,  
20 a bar code reader wand,  
display means for displaying information,  
keyboard means for entering data, and  
means for transmitting data to the central control unit over the public telephone network.

10 Preferably, the merchandise ordering unit is in the form of a stand-alone unit to which the bar code reader

wand is connected by means of a flexible cable.

Preferably, the merchandise ordering unit includes a dedicated key or button to cause a list of items selected to appear on the display means.

5 Preferably, the merchandise ordering unit is arranged to accept up-dating information from the central control unit regarding, for example, current prices of merchandise items.

Preferably, the merchandise ordering unit includes 10 dedicated send and receive keys or buttons for transmitting data to or receiving data from the central control unit.

An automated service system constructed in accordance with the invention will now be described by way of example only with reference to the accompanying drawings, in which:

15 Figure 1 is a diagrammatic perspective view of a catalogue used in the system,

Figure 2 is a perspective view of a bar code reader used in the system,

Figure 3 is a diagrammatic perspective view of a 10 conventional telephone instrument and wall socket and a connector lead used in the system, and

Figure 4 is a diagrammatic perspective view of a card reader used in the system.

Referring to the drawings, the system is performed

and comprises a catalogue 1, a bar code reader 2, a connector lead 3 and a card reader 4. The system has particular application to the sale of groceries. The catalogue 1, the bar code reader 2, and the connector lead 3 are used at home by the customer whereas the card reader 4 is provided at a drive-in merchandise collection centre.

The catalogue 1 shows the merchandise offered for sale and is preferably illustrated in full colour and printed on glossy paper, in the manner of the familiar catalogues produced by catalogue sales organizations, in order to make the merchandise appear as tempting as possible. The catalogue 1 differs, however, from the familiar sales catalogues in that against each item offered for sale is printed a bar code 5. The catalogue 1 also includes a printed explanation of how to obtain goods illustrated in the catalogue, in particular the times at which goods may be collected and the procedures involved.

Merchandise illustrated in the catalogue is ordered by the customer using the bar code reader 2 in conjunction with the connector lead 3. Figure 3 shows a conventional telephone instrument 6 which can be plugged into a convenient telephone wall jack 7 or plug of a conventional telephone line.

The connector lead 3 is terminated at one end by another such connector plug 8' of the conventional type and at the other end by a special jack plug 9 arranged to fit into a mating jack socket 10 provided in the bar code reader 2.

The bar code reader 2 comprises a case 11, approximately 12 centimetres wide and 16 centimetres high, of impact resistant high grade plastics material. The case 11 houses a microprocessor and other electronic components needed for the operation of the bar code reader 2. The corners of the case 11 are rounded as shown and one side of the case is provided with a moulded portion 12 to receive and hold a bar code reader wand 13 when the wand is not in use.

The case 11 has a front panel 14 through which a liquid crystal display 15 is visible and constituting, in conjunction with sensors within the case, a membrane-type keyboard for the digits 0 to 9. A name plate on a push-button 16, bearing the logo of the merchandising organization, is provided on the front panel 14 and the panel is apertured in the area 17 to permit sound to emerge from a small speaker mounted within the case 11. A receive button 18 and a send button 19 are also provided on the front panel 14.

remainder of the bar code reader by a coiled lead 20  
able to withstand rough usage. The wand 13 includes  
a touch-sensitive area 21. The bar code reader 2 also  
includes an on-off switch (not shown).

5 The operation of the bar code reader 2 and its use  
in conjunction with the catalogue 1 will now be described.

The user switches on the bar code reader 2 by means  
of the on-off switch and selects from the catalogue 1 the  
items he or she wishes to order. For each item, he or  
10 she runs the tip of the wand 13 over the associated bar  
code 5 in the catalogue 1. The bar code reaches 2  
responds by emitting a "beep" from its speaker and the  
user keys in the quantity of that item required using  
the membrane-type keyboard of the reader. The liquid  
15 crystal display 15 then shows the item, quantity and  
price. If the user wishes to cancel that part of the  
order, he or she simply touches the touch-sensitive area  
21 on the wand 2. Further items are selected in the same  
way.

20 When the user has completed the order, he or she may  
review it by pressing the push-button 16 which causes the  
order to be listed out at the liquid crystal display 15.

The connector plug 8' of the connector lead 3 is  
plugged into a telephone wall socket and the special jack  
17 is inserted into the jack socket 11 of the bar code

reader 2.

The user now keys in a telephone number (given in the catalogue 1) using the membrane-type keyboard of the bar code reader 2 and presses the send button 5 19. The bar code reader 2 then transmits to the telephone exchange the necessary signals to connect the user to the given telephone number. At the given telephone number is automatic equipment for processing orders sent by customers using the bar code readers.

10 The user transmits the order by pressing the send button 19 and then obtains information from the automatic equipment at the given telephone number by pressing the receive button 18. The order corrected as to price and availability by the information from the automatic equipment 15 may be reviewed by means of the push-button 16.

The merchandising organization supplies the user with a holograph-type identity card (not shown) of plastics material for use when collecting the order from a central store.

20 Referring now to Figure 4, the card reader 4 is provided at the central store where the customer goes to collect the order placed by telephone using the catalogue 1 and bar code reader 2.

The card reader 4 is provided in a drive-in area 25 at the central store and comprises a central post 31 on

in the ground and bearing at its upper end a card reader unit 31 including a microprocessor and other electronic components necessary for the operation of the card reader unit.

5        The card reader unit 31 includes a slot 32 to receive the customer's identity card mentioned above, a video display screen 33, push-buttons 34 for communicating with the card reader unit, and a slot for the card reader unit to pass a print-out to the customer. The 10 use of the card reader unit 31 will now be described.

      The customer inserts the identity card mentioned above into the slot 32 and the unit 31 reads the card and matches the identity of the customer with the previously telephoned order. By means of the display screen 33 the customer is questioned about particular services he or she requires and the customer responds using the buttons 34. In particular, the customer indicates whether the option of self-selection of fresh vegetables, fish, meat and other such perishable 15 items is desired. If the customer does select that option, then by means of the slot 35 the unit 31 provides a list of all the perishable items on the customer's order.

      The customer now hands his or her vehicle over to 20 one of the service personnel at the central store and the payment for the vehicle through a mailing bag

and loads all except the self-selection items on the customer's order.

The customer in the meantime goes to a section of the store where goods are arranged in the same order 5 in which they are listed in self-selection print-outs from the card reader unit 31. The fresh perishable items are then weighed out under the supervision of the customer who thereafter goes to an exit of the store where the customer's vehicle loaded by the 10 service person awaits.

It is possible for the system to embrace the sale of petrol and banking services in addition to the sale of the kind of merchandise normally found in supermarkets.

CLAIMS

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1. Patent Claim - Computer Pen

- (a) Bar code sensor feeding data directly into micro processor
- (b) When data has been entered into computer pen it contains its own independent processing capabilities.